



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,448	08/27/2003	Makoto Kashiwaya	Q75424	4596

23373 7590 09/23/2005

SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

LEE, SHUN K

ART UNIT PAPER NUMBER

2878

DATE MAILED: 09/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/648,448

Applicant(s)

KASHIWAYA ET AL.

Examiner

Shun Lee

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0104.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings are objected to because where only a single view is used in an application to illustrate the claimed invention, it must not be numbered and the abbreviation "FIG." must not appear (37 CFR 1.84(u)(1)). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is

requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 4 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4 and 6 recite the limitation "preventing", however the claims do not particularly point out and distinctly claim what is being prevented.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1, 2, 6, and 8-14 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Iwabuchi *et al.* (US 2002/0041977).

In regard to claims **1**, **10**, and **11**, Iwabuchi *et al.* disclose a stimutable phosphor sheet comprising:

- (a) a stimutable phosphor layer (paragraphs 30 and 31) containing a europium-activated cesium bromide based stimutable phosphor as a main ingredient, said stimutable phosphor layer being formed by a vacuum film forming technique (paragraphs 6 and 37-42); and
- (b) a substrate (paragraph 38) supporting said stimutable phosphor layer, wherein a maximum intensity of emission generated in the wavelength range of 490-510 nm is equal to or lower than 50% of a maximum intensity of the emission generated in the wavelength range of 440-460 nm (see Fig. 1).

Art Unit: 2878

The sheet of Iwabuchi *et al.* lacks an explicit description that emission occurs when the stimuable phosphor layer is exposed to electron beams. However, the stimuable phosphor layer have properties such as emission. Therefore, emission occurring when the stimuable phosphor layer is exposed to electron beams is an inherent characteristic of the sheet of Iwabuchi *et al.* Alternatively, it would have been obvious to one having ordinary skill in the art at the time of the invention that the sheet of Iwabuchi *et al.* would emit radiation when exposed to electron beams.

In regard to claim 2 which is dependent on claim 1, Iwabuchi *et al.* also disclose (paragraph 38) a reflective film formed between said substrate and said stimuable phosphor layer, said reflective film for improving efficiency of emergence of stimulated light emission.

In regard to claim 6 which is dependent on claim 1 in so far as understood, Iwabuchi *et al.* also disclose (paragraphs 46 and 47) a barrier film formed on said stimuable phosphor layer, said barrier film for preventing said stimuable phosphor layer, and a film thickness of said barrier film ranges from 0.01 μm to 5 μm .

In regard to claim 8 which is dependent on claim 1, Iwabuchi *et al.* also disclose (paragraphs 30 and 31) that said stimuable phosphor layer is a layer containing as said main ingredient a cesium bromide based stimuable phosphor using europium as an activator, and a molarity ratio between said activator and said cesium bromide based stimuable ranges from 0.0005:1 to 0.01:1.

In regard to claim **9** which is dependent on claim 1, Iwabuchi *et al.* also disclose (paragraph 43) that a film thickness of said stimuable phosphor layer ranges from 50 μm to 1000 μm .

In regard to claims **12-14**, process limitations cannot serve to impart patentability to structures. *In re Dike*, 157 USPQ 581, 585 (CCPA 1968). Methods of making a claimed product are immaterial in a product claim in view of *In re Thorpe*, 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985) and *In re Brown*, 459 F.2d 531, 173 USPQ 685 (CCPA 1972). It is axiomatic that the additional presence of process limitations, no matter how detailed, cannot impart patentability to a product. *In re Pilkington*, 411 F.2d 1345, 162 USPQ 145 (CCPA 1969); *In re Johnson*, 394 F.2d 591, 157 USPQ 620 (CCPA 1968); and *In re Stephen*, 345 F.2d 1020, 145 USPQ 656 (CCPA 1965). Moreover, Iwabuchi *et al.* disclose a stimuable phosphor sheet comprising:

- (a) a stimuable phosphor layer (paragraphs 30 and 31) containing a europium-activated cesium bromide based stimuable phosphor as a main ingredient; and
 - (b) a substrate (paragraph 38) supporting said stimuable phosphor layer, wherein a maximum intensity of emission that is generated in a wavelength range of 490-510 nm is lower than a maximum intensity of the emission generated in a wavelength range of 440-460 nm, and
- said stimuable phosphor layer is formed by a vacuum film forming technique comprising (paragraphs 6 and 37-42):

- (s1) evaporating both of europium and cesium bromide by using a resistance heating in a film forming system;
- (s2) a step of performing evaporation under an evaporation atmosphere in a range of 0.01-3 Pa to form said stimuable phosphor layer in said film forming system;
- (s3) heating said substrate during said evaporation wherein a heating temperature for heating said substrate is in a range of 120-250°C; and
- (s4) annealing said stimuable phosphor layer after it was formed on said substrate wherein a heating temperature for annealing said stimuable phosphor layer is in a range of 150-250°C.

The sheet of Iwabuchi *et al.* lacks an explicit description that emission occurs when the stimuable phosphor layer is exposed to electron beams. However, the stimuable phosphor layer have properties such as emission. Therefore, emission occurring when the stimuable phosphor layer is exposed to electron beams is an inherent characteristic of the sheet of Iwabuchi *et al.* Alternatively, it would have been obvious to one having ordinary skill in the art at the time of the invention that the sheet of Iwabuchi *et al.* would emit radiation when exposed to electron beams.

9. Claims 3-5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwabuchi *et al.* (US 2002/0041977) as applied to claims 2 and 6 above, and further in view of Neriishi *et al.* (US 6,784,448).

In regard to claim 3 (which is dependent on claim 2), claims 4 and 5 (which are dependent on claim 2 in so far as understood), and claim 7 (which is dependent on

Art Unit: 2878

claim 6), the sheet of Iwabuchi *et al.* lacks that said reflective film is a thin film made of one of Al, Al alloys, Ag and Ag alloys, and a film thickness of said reflective film ranges from 0.01 μm to 5 μm , a barrier film formed between said reflective film and said stimuable phosphor layer made of one of silicon oxides, titanium oxides, silicon nitrides, cerium oxides and magnesium fluorides, said barrier film for preventing said reflective film, and a film thickness of said barrier film ranges from 0.01 μm to 5 μm , or that said barrier film is a thin film made of one of silicon oxides, titanium oxides, silicon nitrides, silicon oxynitrides cerium oxides and magnesium fluorides. Neriishi *et al.* teach (column 6, lines 66-67; column 13, lines 4-12) that a reflective film is formed from materials such as titanium oxide or by vacuum deposited aluminum, in order to obtain the desired optical properties. Neriishi *et al.* also teach (column 6, lines 66-67; column 13, lines 4-12) that a protective film is formed from materials such as organic and/or by inorganic compounds with optional additives such as titanium oxide having thickness of 0.1 to 1000 μm , in order to obtain the desired protective and optical properties. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide one or more organic and/or by inorganic layers in the sheet of Iwabuchi *et al.*, in order to obtain desired protective and optical properties for the sheet.

Conclusion

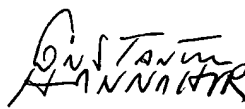
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shun Lee whose telephone number is (571) 272-2439. The examiner can normally be reached on Tuesday-Friday.

Art Unit: 2878

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SL


CONSTANTINE HANNAHER
PRIMARY EXAMINER
GROUP ART UNIT 2878